

**DELIVERING MULTICAST SERVICES ON A WAVELENGTH DIVISION
MULTIPLEXED NETWORK USING A CONFIGURABLE FOUR-PORT
WAVELENGTH CROSSBAR SWITCH**

ABSTRACT OF THE DISCLOSURE

A method and a system in which selected wavelengths of a wavelength division multiplexed (WDM) signal are modulated with multicast data for multicasting data services on an optical network. The WDM signal is received from a hub node of the optical network, such as a unidirectional ring network or a bi-directional ring network. A four-port wavelength crossbar switch (4WCS) selectively switches selected wavelengths from the optical network to a modulator loop. The modulator loop includes a multicast modulator that modulates the selected plurality of wavelengths with the multicast data. Each modulated wavelength is then switched back to the optical network by the 4WCS switch, and sent to a plurality of subscriber nodes of the optical network. This architecture allows a facility provider to be physically separated from a content provider, and affords the flexibility of selectively delivering multicast content to individual subscribers.